The Builder.

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N more than one occasion we have mourned over the decay of skill amongst our operative bricklayers,—the sad result of cutting-estimates, sub-letting, and the use of "compo"—and held up to merited condemnation the work to be found in the majority of our ordinary dwelling-houses. Bricklayers are no longer animated by the right spirit; pride in their work they have none; anxiety to excel exists no longer. Exceptions, of course, there are; men desirous of being something more than mere labourers,—prompt, able, and ingenious, who know something of lines, can find enjoyment and advantage in a mechanics' institute, and will give extra time and thought to their work, solely for the gratification of seeing it to be good. We speak, however, of the general body, and the exceptions, if they were asked, would confirm what we say.

The men themselves are scarcely to blame: they have not had fair play. There are few apparent inducements for good work or superior skill; rapidity and bad work are what their masters have desired, and the result is, that men capable of executing good work are with difficulty to be found. We said there are few *apparent* inducements, because it is certain that if a workman apply himself vigorously and resolutely, and acquire superior skill, he may rely on its proving, in the end, the means of advancing him in life, and winning for him the confidence and respect of his fellows.

An able and upright artizan deserves the respect of all,—more respect, even, than is usually accorded him. To be honest and virtuous is the first requirement—far beyond the technical skill of which we are speaking; and we would earnestly and kindly exhort to both. Some efforts to advance our operatives are urgently needed: it has always been with us an anxious desire and a pressing duty, and we run the risk of offending by plain speaking, with this great end in view.

The brickwork to be found in the neighbourhood of London, east, west, north, and south, is truly disgraceful: unworkmanlike, unsubstantial, deceptive, dangerous. In some, and not a few cases, the mortar is compounded of, what is called, sand dug on the spot, rather dirt than grit, or, at the best, of so hungry a nature as to demand much more lime than is given, or is in other respects desirable; the bricks are often spongy and bad, incapable of resisting one-tenth the pressure of a really sound brick, and, still further to weaken them, with a huge hollow in the underside. The extraordinary difference in the strength of bricks we shewed by experiment not long ago, and the injurious effect of this hollowing out.

Now let us look at the execution of the work. What do we see? Mortar joints three-fourths of an inch thick, and yet a series of cavities throughout the walls unfilled; the wall in two separate leaves scarcely tied together by a header at every three or four feet, (many courses without any headers at all), instead of consisting wholly, as it should, of header and stretcher alternately. Bond in the other direction there is little or none,—you may find the upright joints running one into another for fifteen or eighteen inches. The half-brick work forming the flues and chimney breast is loosely put together, so as afterwards to allow smoke to find its way into the apartments,* coarsely rendered inside with common mortar, instead of pargetting, and the arch (to misuse the word) over the chimney opening is only kept in its place by the chimney bar which the Buildings Act calls for. The arches (?) over the window openings are little better, as is proved by the cracks in nine out of every ten houses with compo'd fronts. Where the front is not wholly compo'd, but a narrow cement architrave is to be put round the windows, a miserable imposition termed a six-inch arch is introduced, so that it may be hidden by the aforesaid architrave.

Wood bond being for the most part interdicted, walls are raised without any, and we have in our eye at this moment several flank walls, 40 feet high, to semi-detached houses, which stand without a morsel of bond from top to bottom, or any thing to steady them. The occurrence of accidents with work thus executed can excite no surprise, especially in bad weather: the wonder is that we do not hear of more. To increase the risk, too, irregular masses of brick run together in the kiln, known as "burrs," are often used for cheapness' sake, especially in the lower parts of buildings, and, having no solid bed, materially lessen the strength of the walls. This, however, as well as the absence of bond, is the fault of the builder rather than of the operatives, and so, indeed, is the bad workmanship and want of skill amongst these operatives, to which we have been alluding, and which we are most anxious to assist in remedying.

As to bond, it is of the utmost consequence that builders should resort to the use of hoop-iron and cement. Do not let them wait for an accident, fancying, because some walls stand without this precaution, that it is unnecessary; they are exposing themselves to imminent risk, and cannot even plead the increased expense as an excuse for omitting it; this being comparatively unimportant.

Professor Hosking, in a "Guide to the Proper Regulation of Buildings in Towns," published this day,† and which has come into our hands too recently to enable us to do more at present than make one or two extracts, says, as to the abandonment of timber bond,—

"One important principle which ought to be always had in view in the employment of these materials (brick and stone) in ordinary buildings is for the most part wholly lost sight of, if indeed it be at all recognised in the modern practice of building. Brick or stone, or brick and stone together, with mortar as a setting material—not only as a cement for the purpose of sticking the materials together, but as a means of rendering excessive labour upon the beds and joints of stones unnecessary, and to make up for the casual unevenness of the beds of bricks, and to adapt them to the various forms required to be produced—being capable of producing any and almost every kind of structural erection required in building, without permanent aid from any other materials, are best employed when they are employed in such manner as to be free from dependence upon other and less trustworthy materials. The most perfect erections as buildings are those in the composition of which this principle has been understood and applied, and in the execution of which it has been fairly practised. To save in the quality or quantity, or in both, of materials, and to economize labour, or to satisfy the judgment of ignorant constructors, brick and stone walls are too commonly made to depend wholly or in great part upon timber in bond and in plates; and as timber takes its place for such purposes most frequently in situations where its bad tendencies are most mischievous, and in such manner as to bring its objectionable qualities into operation almost of necessity, the brick and stone walls of most modern erected buildings, such as houses, in our English towns, are rendered highly inflammable, and are much exposed to early decay, and liable thereby to become dangerous, even if they escape becoming so from access of fire to the timber. If adventitious aid be given to brick or stone walls by foreign materials, the materials ought to be at the least harmless, and the aid superfluous. Iron in bulk is a most improper substance to incorporate with walls, because of its great susceptibility of heat; but iron used in thin laminæ, as hoop-iron laid in walls in the bed-joints of the brick or stone, cannot be productive of any bad consequences to the structure, whilst it affords the means of tying together walls which, because of recesses and voids, whether for doors and windows, or as flues, may be slighter or less solid than they ought to be.

As bricks are commonly made of the same form, and come to the hands of the builder practically of the same size; and as bricks, even where stone is principally used, are requisite, if not essential, for many of the purposes of dwelling-houses and such like buildings, the thicknesses of walls are conveniently determined to be as they can be produced in brickwork, that is to say, of so many bricks or half bricks. Practically, too, brick walls take a middle place among walls of brick and stone together, and walls wholly of stone. Some kinds of stone are harder and more durable than bricks are commonly produced, whilst some kinds are softer and less adapted to withstand the action of the weather than bricks of average quality are found to be; but bricks come to the hands of the workman regular and unvarying in form, and that form the best adapted for the arrangement in the construction of a wall which, under the designation of bond, gives such a degree of consistency to the structure that a weight placed upon the top of a well-bonded wall in any place is carried by the wall in every part throughout its whole thickness, and throughout a greater or less proportion of the length, according to the height of the wall, and so in degree as to a weight imposed upon the wall at any intermediate level.

Bond in brickwork is most conveniently and most effectively formed and maintained by disposing the bricks in their courses either endwise and lengthwise (technically, header and stretcher), alternately brick and brick, or course and course; that is to say, that the bricks in every course should be laid alternate header and stretcher, or that the courses should consist of all headers and all stretchers alternately. The former arrangement—alternate header and stretcher in the same and in every course—is known in this country as Flemish bond; and the latter—alternate courses of header and stretcher—is distinguished by the term English bond. Neat work in face can be produced more easily with Flemish bond, but English bond has the reputation of being the best bond structurally.*

The arrangement of alternate header and stretcher in the same course is that which most prevails in building walls with stone; or

* The evils of such work, which is not confined to the metropolis, are evident. A correspondent near Bradford thus writes:—"A few days ago the occupants of a house in Bowling were surprised at perceiving smoke issuing from some cracks in the ceiling of the chamber. Having for several hours previously been annoyed by the smell of burning wood, they concluded that there must be something on fire in the roof. Accordingly, the plaster ceiling was broken into, and the main beam was found to be on fire. A plentiful supply of water being at hand, the fire was soon extinguished. An examination was then made as to the origin of the fire, when it was found to have been occasioned by a header in the flue, either left out by the bricklayers when building, or knocked out by the carelessness of the joiners when fixing the ceiling joists, thereby admitting of an accumulation of soot in the flue. We cannot be too careful in watching bricklayers and joiners when at work about flues. Often do we hear of the whole of the papering of a room being spoiled by smoke issuing from above skirting boards, and sometimes we hear of chimneys being on fire, the whole occasioned by the joiner driving half or a quarter of a brick into the flue, when plugging to fix his work.

† Murray, Albemarle-street.

* Why the two arrangements described above should be distinguished by the names they bear is a matter of uncertainty; at least it is unknown to the author, who supposed, in common with most other people still within his knowledge, that the practice of alternate header and stretcher in the same course was the practice in Flanders, and generally in the neighbouring countries on the continent; whilst the term English bond seemed to imply that the arrangement which bears that denomination is peculiar to England. A visit made a few years ago to the countries where Flemish bond ought most to abound, if the name be properly applied, enabled the author to observe what had before, it has since, been remarked by any person who had published his remarks, and what was quite unknown to every one [illegible] has stated since his return, what he had observed. At Rotterdam and at the Hague, at Antwerp, at Brussels and at Ghent, at Cologne, at Mayence, and at Frankfort, and across throughout the north-eastern parts of France, brick walls are built according to the arrangement distinguished in England as English bond; and Flemish bond is unknown—at least as much as example of it fell under the author's observation in any of the towns and countries indicated, although his attention was called to the subject by the quay walls at Rotterdam before he set foot on shore.

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